

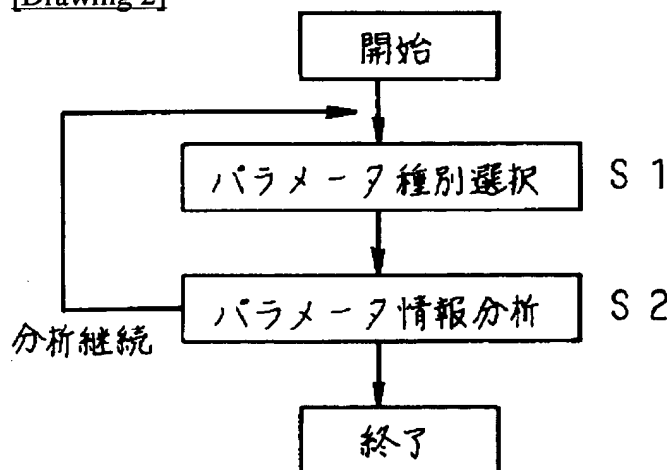
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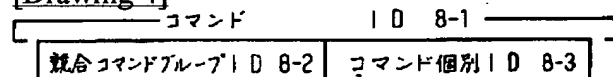
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DRAWINGS

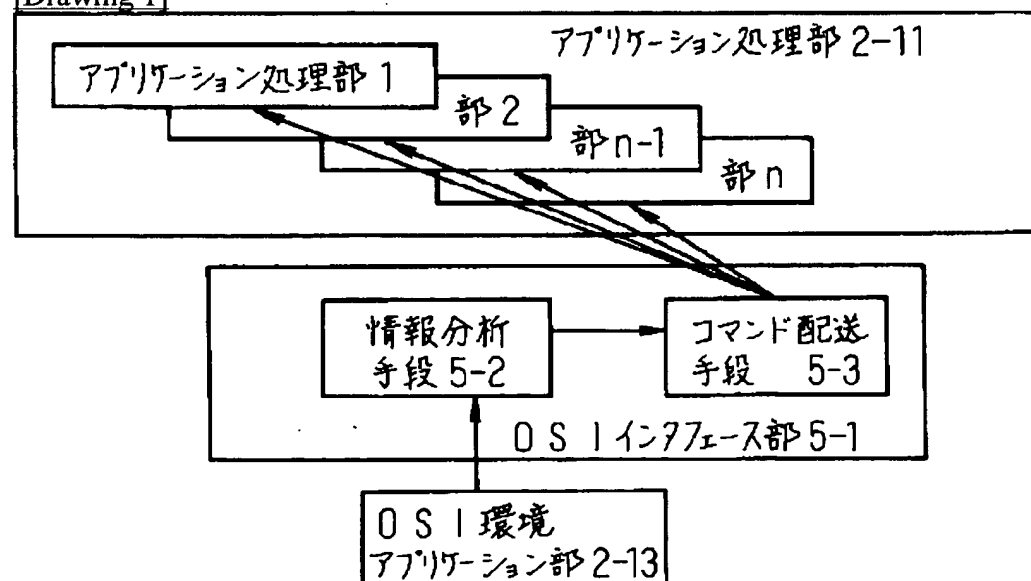
[Drawing 2]



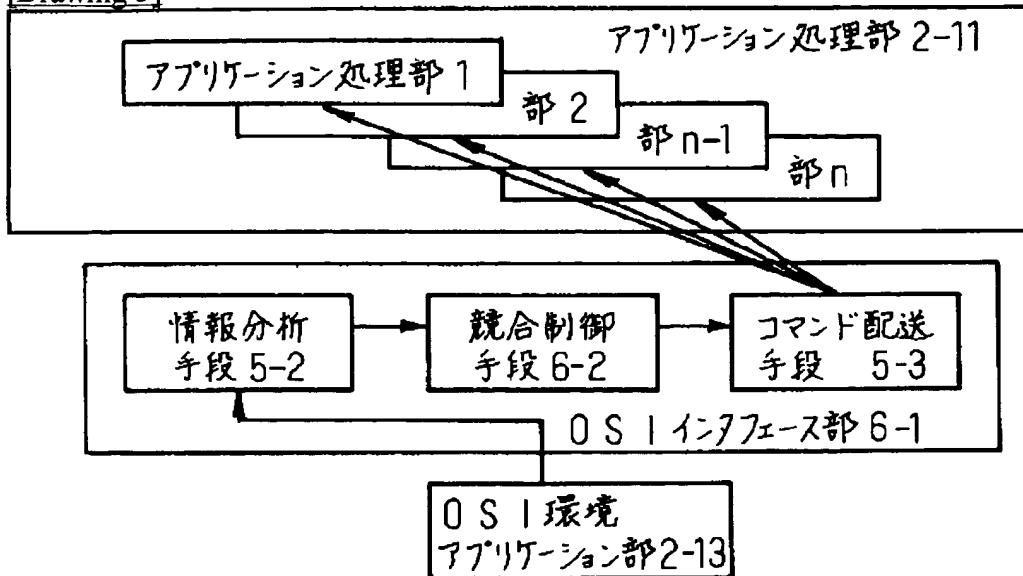
[Drawing 4]



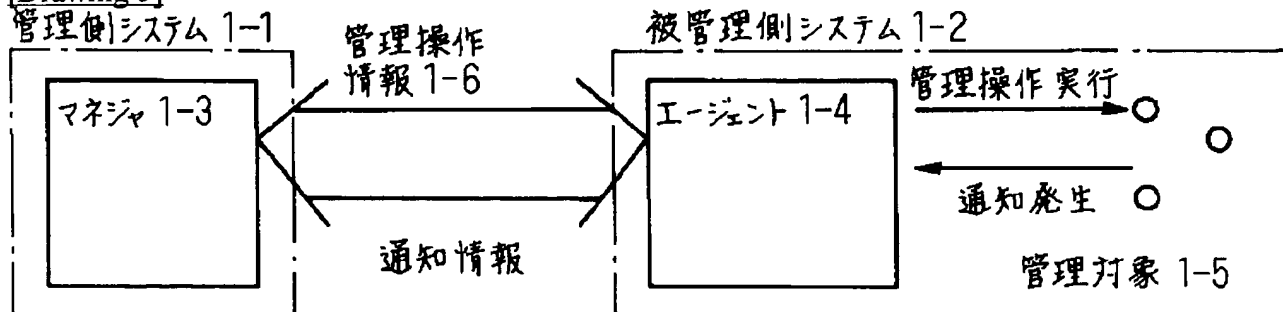
[Drawing 1]



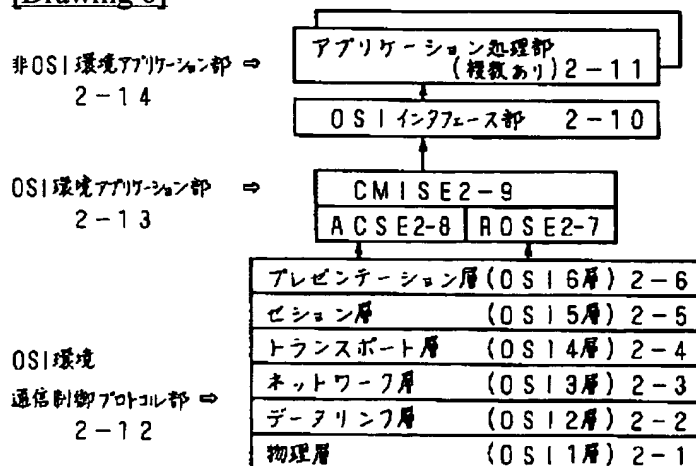
[Drawing 3]



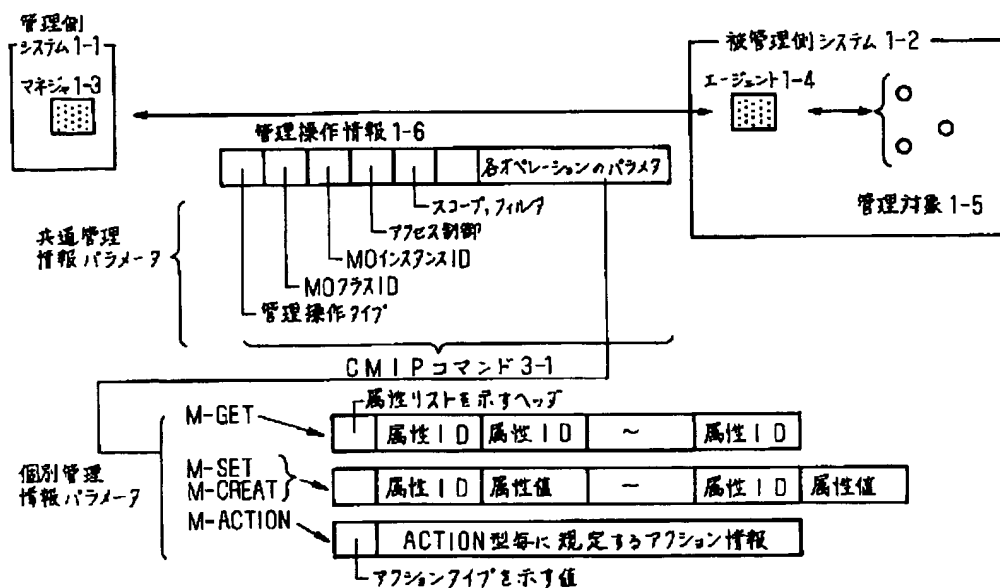
[Drawing 5]



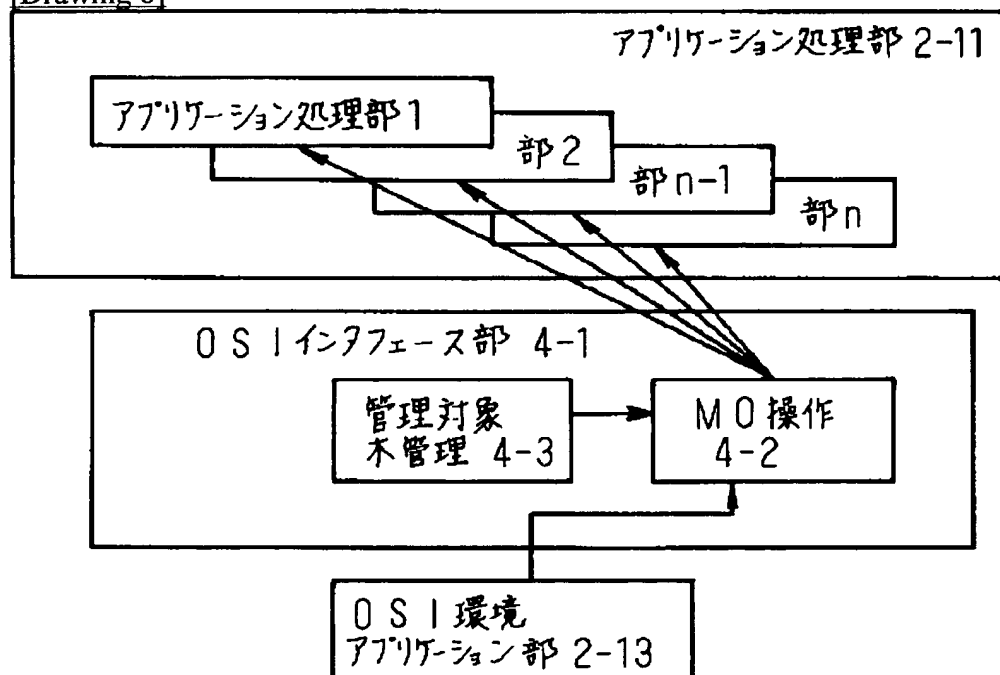
[Drawing 6]



[Drawing 7]



[Drawing 8]



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Field

[Field of the Invention] this invention consists of a management side system and a managed side system, and when there is communication system which performs overhead operation based on OSI canonical with CMIP command between both the system, it relates to enhancement of OSI interface device located between OSI environmental application section in the aforementioned managed side system of this communication system, and non-OSI environmental application section.

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OPERATION

[Function] At OSI interface device of this invention, it asks for command identification information with an information analysis means according to the content of one or more kinds of management information parameters other than MO class identification information on CMIP command, and MO interface identification information, and each application processing section is judged from command identification information with the command delivery means. Therefore, a design of the application processing section is attained in the broad domain, without the relation between MO and the application processing section being restrained by the one for one.

[0035] Moreover, with a command delivery means, the destination application processing section can be judged uniquely [a meaning] from the command identification information of an information analysis means, and the complicated scenario for command occurrence is unnecessary. Furthermore, if a contention-control means is added, the fine contention control in within the limits discriminable by command identification information will become possible.

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Technique

[Description of the Prior Art] Hereafter, it enters from an explanation of a fundamental matter required for understanding of this invention.
First, the conventional standardization technique is explained.

[Translation done.]

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Severe constraint of making the conventional method into the same unit as MO class at a design of the application processing section will be attached. For example, in the application processing section of a communication relation, since the scale of the whole application section is large, the case where the application processing section of a proper scale cannot be constituted can be considered. For this reason, the device which can design the application processing section in a to some extent free unit is needed.

[0027] Moreover, a design of MO class and a design of the application processing section need to become possible independently to some extent. For example, although whether a device-management function and an equipment test function are set to the same MO or it is referred to as another MO should choose what has an advantage in the position of an interface design, whether it considers as the same application processing section should choose out of the position of an internal-processing design. Since these are not necessarily in agreement, OSI interface section which enables a to some extent free design is needed.

[0028] Although there is a clear identifier for a contention judging by the command of a conventional type about a contention control, there is no identifier for a contention judging by the case of CMIP command. Therefore, the contention judging means which harmonized with the means of OSI interface on the staff and others is needed.

[0029] It is offering OSI interface section which removed the constraint on an application processing section design which the purpose 1 of this invention does not need complicated processing, and is produced from the above thing by the conventional method. The purpose 2 of this invention is a simple algorithm, and is offering OSI interface section which makes a fine contention control possible.

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Effect

[Effect] According to this invention, in OSI interface device, a constraint when designing the application processing section is remarkably mitigable. Moreover, when the ease of a design is aimed at and it makes the scale of the application processing section into a suitable size, the application processing section of a suitable size can be constituted combining the function subdivided for every command ID. [0050] Moreover, since the application processing section is specified as a one for one from CMIP command, processing is simplified. And the algorithm which discriminates the destination application processing section is easy, and the high-speed command delivery of it is attained. [0051] Furthermore, although there is no information which shows rivalry in CMIP command, the unit of processing can be enough caught per parvus and a fine contention control becomes possible. Moreover, since grouping can be carried out in a suitable unit and useless reference processing can be omitted, high-speed processing is attained.

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MEANS

[Means for Solving the Problem] An information analysis means to create the internal command which receives CMIP command from OSI environmental application section, asks for command identification information by OSI interface device of this invention according to the content of the class information for a management and the instance information for a management which are a management information parameter in CMIP command, and one or more management information parameters other than these corresponding to the above-mentioned purpose 1, and contains the content and this command identification information of a management information parameter in CMIP command, and [0031] It has a correspondence table with the identification information of all the application processing sections set as all command identification information and the object of a command reception, and the application processing section used as the destination of this internal command is judged from the command identification information in the internal command which received, and it has a command delivery means to pass an internal command to this application processing section.

[0032] Furthermore, the execution status table showing the status of the command under execution for every group of commands to which the command belongs corresponding to the above-mentioned purpose 2, [which group and group for every group of commands, which group and group compete and do not compete, and] The rivalry table in which the existence of the rivalry to say was described (for example, a group of commands is allotted in accordance with an axis of ordinate) Another group of commands is allotted in accordance with a quadrature axis, between the groups of commands in rivalry, the intersection of length and width is equipped with the table which attached O mark, when there is nothing to x mark and rivalry, and it is [0033]. From the command identification information in the internal command which received from the information analysis means, the group of commands to which the command belongs is discriminated, and the discriminated group of commands and the group of commands in rivalry know either with reference to a rivalry table. Next, when the group of commands in the rivalry judges the existence of the command execution which is in rivalry by investigating whether it is under execution with reference to an execution status table and it judges that it is nothing, the command delivery means is equipped with a contention-control means to pass an internal command.

[0034]

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EXAMPLE

[Example] (Example 1) View 1 is the block diagram showing one example (OSI interface device) of this invention. In this drawing, OSI interface section (5-1) as one example (OSI interface device) consists of the information analysis means (5-2) and the command delivery means (5-3).

[0037] In this example, the internal command (command containing a command ID information and the information which shows the content of execution of the command contained in CMIP command) created with the information analysis means (5-2) is passed to a command delivery means (5-3).

[0038] With an information analysis means (5-2), CMIP command from OSI environmental application section (2-13) is received, one or more kinds of management information parameters other than the overhead operation type information which is a management information parameter, an MO class ID information, an MO instance ID information, a gyroscope information, a VCF information, an action type information, an MO class ID information, and an MO instance ID information are analyzed according to an analysis algorithm, and a command ID information is searched for.

[0039] Furthermore, an information analysis means (5-2) creates an internal command. Let the analysis algorithm of an information analysis means (5-2) be the algorithm which addresses to a meaning and chooses a command ID information from the combination of the overhead operation type information which is the parameter class of CMIP command, an MO class ID information, an MO instance ID information, a gyroscope information, and a VCF information. This analysis algorithm is shown in drawing 2.

[0040] For example, if the following algorithms (drawing 2) are followed, it can address to a meaning and a command ID information can be chosen. Beforehand, the sequence of the management information parameter class which should be analyzed is specified.

[0041] Step S1: The parameter class which should be analyzed first is specified first. Next, the command ID information which corresponds from the parameter value of the specified parameter class is judged. Step S2: When there is no corresponding command ID information, parameter classes other than the class which judged to be continuation analysis and was analyzed till present are selected according to the sequence specified beforehand.

[0042] Steps S1 and S2 are repeated until a command ID information is judged similarly or it ends analysis of all parameter classes hereafter. Even if it ends analysis of all parameter classes, when a command ID information cannot judge an application processing section command ID information, the notice of an error is sent to applicable CMIP command.

[0043] An internal command is passed to each application processing section which a command delivery means (5-3) by which the internal command was received has the correspondence table of a command ID information and each application processing section, and judges each application processing section and corresponds from the command ID information on the internal command which received. If this algorithm is followed, when given most finely, a different value will touch each operation correspondence (except [action]) of same MO instance with command ID. In the case of an action, it touches at the action type correspondence to the same MO.

[0044] (Example 2) View 3 is the block diagram showing the example 2 of this invention. Drawing 3 is

referred to. OSI interface section (6-1) of an example 2 consists of the information analysis means (5-2) of an example 1 (drawing 1), a command delivery means (5-3), and a contention-control means (6-2) by which it is located among them.

[0045] In this example, the internal command created with the information analysis means (5-2) is passed a command delivery means (5-3) via a contention-control means (6-2). It has the execution status table in which a contention-control means (6-2) shows the command under execution in the group-of-commands unit which belongs, and the rivalry table matching and showing which group of commands and group of commands cannot be found in rivalry by which group of commands and group of commands being in rivalry in two or more groups of commands.

[0046] Each command is classified into the group of commands which makes rivalry the same beforehand. With a contention-control means, if an internal command is received, group-of-commands ID which discriminates the group of commands which belongs from command ID will be calculated, and a rivalry table will investigate whether there is any group of commands of the others the flag for contention stands, or there is nothing with reference to a rivalry table.

[0047] If there is a group of commands which stands as for the flag for contention, with reference to an execution status table, it will investigate whether next the group of commands is performing. That is, it checks by whether the display flag stands during execution of an execution status table. In this way, when judged with there being no command execution in rivalry, a display flag is set as the part equivalent to group-of-commands ID which shows the group of commands to which this internal command in an execution status table belongs during execution, and this internal command is passed to a command delivery means (5-3).

[0048] In addition, when the application processing section corresponding to this internal command is completed, the notice of an end is transmitted to the application processing section. The contention-control means (6-2) which received the notice of an end cancels a flag during execution of an execution status table. On the other hand, as law, as shown in drawing 4 , there is the technique of constituting command ID from a group-of-commands ID and a command individual ID command ID to group-of-commands ID becomes [the technique] settled uniquely [a meaning]. In addition, a group of commands can be defined to the same fineness as command ID. What is necessary is just to set the content of command individual ID to NULL, in realizing this by the technique shown in drawing 4 .

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] this invention consists of a management side system and a managed side system, and when there is communication system which performs overhead operation based on OSI canonical with CMIP command between both the system, it relates to enhancement of OSI interface device located between OSI environmental application section in the aforementioned managed side system of this communication system, and non-OSI environmental application section.

[0002]

[Description of the Prior Art] Hereafter, it enters from an explanation of a fundamental matter required for understanding of this invention. First, the conventional standardization technique is explained.

[0003] (The conventional standardization technique) View 5 is the block diagram showing the basic model of OSI management. OSI is open here. system interconnection (open systems interconnection) is meant and the idea as standard network architecture which solves the interconnection problem between different model computer systems is expressed. As for the various computer systems mounted based on this OSI canonical, interconnection is guaranteed.

[0004] Now, in OSI management, it is based on the model which consists of the manager (1-3) put on each system of a management side system (1-1) and a managed side system (1-2), an agent (1-4), and a management object (1-5) which abstracted the resource managed so that it may see in drawing 5. In addition, a management object is hereafter called MO (management object).

[0005] Here, a management side system (1-1) is an operation system using CPU, memory and the work station equipped with the communication device for a maintenance based on X.25 which is advice of CCITT, the personal computer, etc. Moreover, a managed side system (1-2) is a node system equipped with CPU, memory, and the communication device for X.25 maintenance. A node system is a system used as the unit for realizing networks, such as a telephone switchboard, a line switching machine, a packet switch, an ATM switching system, a facsimile store-and-forward-switching machine, and a transmission equipment.

[0006] From a management side system (1-1), the management object of a managed side system (1-2) is visible as MO. MO equivalent to a resource to add operation is specified to an agent (1-4), and various operations are performed. If MO is defined also to log information or data, it is not the physical substance with the object of overhead operation. Moreover, what is not defined as MO even if the physical resource exists cannot perform overhead operation.

[0007] A manager (1-3) and an agent (1-4) communicate using OSI protocol. Drawing 6 is explanatory drawing showing the configuration of a managed side system (1-2). Drawing 6 is referred to. OSI management consists of the OSI environmental communications control protocol section (2-12) which consists of one layer (2-1) of OSI -, and six layers (2-6) of OSI, and the OSI environmental application processing section (2-13). OSI environmental application processing section (2-13) is realized by ROSE (2-7), ACSE (2-8), and CMISE (2-9).

[0008] Each vocabulary is explained here.

- It has a function for exchanging overhead operation and a notice using a CMISE(common management information service element):common management information protocol data unit.
- Establish the association which is an interconnection relation to ACSE(Association Control Service Element):manager agent side.
- Perform ROSE(remote operation service element):manager agent's data transfer. CMIP is mapped and transmitted to OPERATION macro of ROSE, and ERROR macro.

[0009] Since MO is set as the object of a management as mentioned above, the information structure for a management is important and the architecture of the information structure which took in the object-oriented idea so that a strict definition might be attained is made from OSI management. The idea which realizes the information structure based on the object oriented in OSI management is explained below.

[0010] - To two or more concrete management objects, an MO class-MO class specifies the matter which becomes common, and shows the framework of the object managed. This framework is called MO definition. The attribute which the type of the action operation added to MO, an operation of MO to it, and MO have in MO definition as a property of MO, the modality of notice from MO, etc. are defined. Specification description of MO definition is prescribed by X.722 (ISO 10165-4). In addition, a standard [for CCITT] one expresses X. number and OSI canonical with ISO number below.

[0011] - An MO instance-MO instance expresses the object managed concretely. MO instance belongs to one of MO classes, and

the property of MO is prescribed by MO definition. Moreover, concrete attribute value is set up corresponding to attribute ID.
 [0012] A [inheritance tree] inheritance tree indicates the vertical relation of MO class. Low-ranking MO class (subclass) inherits the property of MO class (superclass) of a high order. MO class name of a high order is defined by it by MO definition, and only the difference of the property with a high order class is described by MO definition by it.

[0013] - A containment tree-containment tree shows the vertical relation of MO instance. This shows what hierarchy the actual resource matched with MO instance serves as.

[0014] - It is the tree which gave the identifier to MO instance on the basis of the naming tree-above-mentioned containment relation, and made it the layered structure according to the conte ***** tree. In order to clarify on a naming, altogether different MO instance name is given by MO group with MO of the same high order.

[0015] - Only the thing according to some conditions can extract (a plurality is good) by the VCF / gyroscope function out of MO defined as the VCF and the gyroscope function-***** tree. for example, all a certain class subordinate's MO instances -- specification of all MO with the how many steps and a certain attribute etc. can be performed from the position with specification and a tree

[0016] - CMIS (X. 710 / ISO9595) and CMIP (X. 711 / ISO9595) are specified as an OSI management protocol-common management information service / a protocol (it doubles and referred to as common management information service element CMISE). The main things of the overhead operation information defined as CMISE are as follows.

[0017]

M-GET [.. Of operation instruction M-CREATE for a management / .. Additional M-DELETE for a management / .. Deletion for a management [0018]] Reading M-SET of the attribute value for a management Information setup / change

M-ACTION to the attribute for a management Below, an overhead operation information is called CMIP command and (3-1) shows CMIP command with drawing 7 . Drawing 7 is explanatory drawing showing the configuration of the Protocol Data Unit of CMIP. The inner CMIP command (3-1) of a Protocol Data Unit has specified an overhead operation type / MO class / MO instance / access control / gyroscope VCF as a common management information parameter so that it may see in drawing 7 .

[0019] Furthermore, CMIP command (3-1) includes the action type and the action information as a management information parameter by the overhead operation type as an individual management information parameter by power attribute ID [which is read in M-GET], attribute ID [which should be set in M-SET], attribute value, and M-ACTION. There is no individual management information parameter in M-DELETE.

[0020] CMIP command has the interaction type thing which a demand and authentication become the pair of a one for one, and complete. Moreover, CMIP command specifies the attribute which the position on the ***** tree of MO and MO have by gyroscope VCF ability, and has some which choose two or more MO. In addition, the logical expression showing a selection condition goes into the parameter of a gyroscope. The list of attribute ID and attribute value used as the conditions in the case of choosing goes into the parameter of a VCF.

[0021] As mentioned above, if OSI canonical is followed, MO which is how for it to be visible from a managed side system can be specified. There is the following conventional method as conventional technique of OSI interface device.

[0022] (The conventional method of OSI interface device) The application processing section and MO instance are matched with 1:1 with this conventional technique (a management information database [in OSI management] (MIB), design [of the support system], and "implementation" electronic-intelligence communication society [besides Miyauchi] paper magazine, B-1, Vol.J 74-B-1, NO.11 pp.971-982).

[0023] Drawing 8 is a block diagram showing the conventional method of OSI interface device. When designation of generation of MO operation means (4-2) in OSI interface section (4-1) of MO is received, first, so that it may see in this drawing The application processing section name which used the class name of CMIP message as the key, and was equipped with the execution function corresponding to the concerned class, The instance name acquisition from the tree Management Department (4-3) for a management is performed, this instance name is attached, substance generation of this application processing section is performed, and activity start is directed.

[0024] Henceforth, the destination application processing section is judged uniquely [a meaning] from this instance name, and a command is sent and received. In addition, at the tree Management Department (4-3) for a management, it has the conte ***** relation information and automatic grant of an internal instance name is performed. Next, the conventional technique about a contention control is explained.

[0025] (The conventional technique about a contention control) When execution of each application processing section is performed in parallel, grasp of rivalry and execution of the control at the time of contention are indispensable techniques. However, the conventional technique about the command control of a managerial system-ed which carried OSI environmental application section is not found. There is technique currently carried out as similar command contention-control technique by the swap device which used the command of a conventional type. In this case, by the command of a conventional type, an identifier for contention controls called function ID is contained as content of a command, and is performing the contention control using this.

[0026]

[Problem(s) to be Solved by the Invention] Severe constraint of making the conventional method into the same unit as MO class at a design of the application processing section will be attached. For example, in the application processing section of a communication relation, since the scale of the whole application section is large, the case where the application processing section of a proper scale cannot be constituted can be considered. For this reason, the device which can design the application

processing section in a to some extent free unit is needed.

[0027] Moreover, a design of MO class and a design of the application processing section need to become possible independently to some extent. For example, although whether a device-management function and an equipment test function are set to the same MO or it is referred to as another MO should choose what has an advantage in the position of an interface design, whether it considers as the same application processing section should choose out of the position of an internal-processing design. Since these are not necessarily in agreement, OSI interface section which enables a to some extent free design is needed.

[0028] Although there is a clear identifier for a contention judging by the command of a conventional type about a contention control, there is no identifier for a contention judging by the case of CMIP command. Therefore, the contention judging means which harmonized with the means of OSI interface on the staff and others is needed.

[0029] It is offering OSI interface section which removed the constraint on an application processing section design which the purpose 1 of this invention does not need complicated processing, and is produced from the above thing by the conventional method. The purpose 2 of this invention is a simple algorithm, and is offering OSI interface section which makes a fine contention control possible.

[0030]

[Means for Solving the Problem] An information analysis means to create the internal command which receives CMIP command from OSI environmental application section, asks for command identification information by OSI interface device of this invention according to the content of the class information for a management and the instance information for a management which are a management information parameter in CMIP command, and one or more management information parameters other than these corresponding to the above-mentioned purpose 1, and contains the content and this command identification information of a management information parameter in CMIP command, and [0031] it has a correspondence table with the identification information of all the application processing sections set as all command identification information and the object of a command reception, and the application processing section used as the destination of this internal command is judged from the command identification information in the internal command which received, and it has a command delivery means to pass an internal command to this application processing section.

[0032] Furthermore, the execution status table showing the status of the command under execution for every group of commands to which the command belongs corresponding to the above-mentioned purpose 2, [which group and group for every group of commands, which group and group compete and do not compete, and] The rivalry table in which the existence of the rivalry to say was described (for example, a group of commands is allotted in accordance with an axis of ordinate) Another group of commands is allotted in accordance with a quadrature axis, between the groups of commands in rivalry, the intersection of length and width is equipped with the table which attached O mark, when there is nothing to x mark and rivalry, and it is [0033] From the command identification information in the internal command which received from the information analysis means, the group of commands to which the command belongs is discriminated, and the discriminated group of commands and the group of commands in rivalry know either with reference to a rivalry table. Next, when the group of commands in the rivalry judges the existence of the command execution which is in rivalry by investigating whether it is under execution with reference to an execution status table and it judges that it is nothing, the command delivery means is equipped with a contention-control means to pass an internal command.

[0034]

[Function] At OSI interface device of this invention, it asks for command identification information with an information analysis means according to the content of one or more kinds of management information parameters other than MO class identification information on CMIP command, and MO interface identification information, and each application processing section is judged from command identification information with the command delivery means. Therefore, a design of the application processing section is attained in the broad domain, without the relation between MO and the application processing section being restrained by the one for one.

[0035] Moreover, with a command delivery means, the destination application processing section can be judged uniquely [a meaning] from the command identification information of an information analysis means, and the complicated scenario for command occurrence is unnecessary. Furthermore, if a contention-control means is added, the fine contention control in within the limits discriminable by command identification information will become possible.

[0036]

[Example] (Example 1) View 1 is the block diagram showing one example (OSI interface device) of this invention. In this drawing, OSI interface section (5-1) as one example (OSI interface device) consists of the information analysis means (5-2) and the command delivery means (5-3).

[0037] In this example, the internal command (command containing a command ID information and the information which shows the content of execution of the command contained in CMIP command) created with the information analysis means (5-2) is passed to a command delivery means (5-3).

[0038] With an information analysis means (5-2), CMIP command from OSI environmental application section (2-13) is received, one or more kinds of management information parameters other than the overhead operation type information which is a management information parameter, an MO class ID information, an MO instance ID information, a gyroscope information, a VCF information, an action type information, an MO class ID information, and an MO instance ID information are analyzed according to an analysis algorithm, and a command ID information is searched for.

[0039] Furthermore, an information analysis means (5-2) creates an internal command. Let the analysis algorithm of an

information analysis means (5-2) be the algorithm which addresses to a meaning and chooses a command ID information from the combination of the overhead operation type information which is the parameter class of CMIP command, an MO class ID information, an MO instance ID information, a gyroscope information, and a VCF information. This analysis algorithm is shown in drawing 2.

[0040] For example, if the following algorithms (drawing 2) are followed, it can address to a meaning and a command ID information can be chosen. Beforehand, the sequence of the management information parameter class which should be analyzed is specified.

[0041] Step S1: The parameter class which should be analyzed first is specified first. Next, the command ID information which corresponds from the parameter value of the specified parameter class is judged. Step S2: When there is no corresponding command ID information, parameter classes other than the class which judged to be continuation analysis and was analyzed till present are selected according to the sequence specified beforehand.

[0042] Steps S1 and S2 are repeated until a command ID information is judged similarly or it ends analysis of all parameter classes hereafter. Even if it ends analysis of all parameter classes, when a command ID information cannot judge an application processing section command ID information, the notice of an error is sent to applicable CMIP command.

[0043] An internal command is passed to each application processing section which a command delivery means (5-3) by which the internal command was received has the correspondence table of a command ID information and each application processing section, and judges each application processing section and corresponds from the command ID information on the internal command which received. If this algorithm is followed, when given most finely, a different value will touch each operation correspondence (except [action]) of same MO instance with command ID. In the case of an action, it touches at the action type correspondence to the same MO.

[0044] (Example 2) View 3 is the block diagram showing the example 2 of this invention. Drawing 3 is referred to. OSI interface section (6-1) of an example 2 consists of the information analysis means (5-2) of an example 1 (drawing 1), a command delivery means (5-3), and a contention-control means (6-2) by which it is located among them.

[0045] In this example, the internal command created with the information analysis means (5-2) is passed a command delivery means (5-3) via a contention-control means (6-2). It has the execution status table in which a contention-control means (6-2) shows the command under execution in the group-of-commands unit which belongs, and the rivalry table matching and showing which group of commands and group of commands cannot be found in rivalry by which group of commands and group of commands being in rivalry in two or more groups of commands.

[0046] Each command is classified into the group of commands which makes rivalry the same beforehand. With a contention-control means, if an internal command is received, group-of-commands ID which discriminates the group of commands which belongs from command ID will be calculated, and a rivalry table will investigate whether there is any group of commands of the others the flag for contention stands, or there is nothing with reference to a rivalry table.

[0047] If there is a group of commands which stands as for the flag for contention, with reference to an execution status table, it will investigate whether next the group of commands is performing. That is, it checks by whether the display flag stands during execution of an execution status table. In this way, when judged with there being no command execution in rivalry, a display flag is set as the part equivalent to group-of-commands ID which shows the group of commands to which this internal command in an execution status table belongs during execution, and this internal command is passed to a command delivery means (5-3).

[0048] In addition, when the application processing section corresponding to this internal command is completed, the notice of an end is transmitted to the application processing section. The contention-control means (6-2) which received the notice of an end cancels a flag during execution of an execution status table. On the other hand, as law, as shown in drawing 4, there is the technique of constituting command ID from a group-of-commands ID and a command individual ID command ID to group-of-commands ID becomes [the technique] settled uniquely [a meaning]. In addition, a group of commands can be defined to the same fineness as command ID. What is necessary is just to set the content of command individual ID to NULL, in realizing this by the technique shown in drawing 4.

[0049]

[Effect] According to this invention, in OSI interface device, a constraint when designing the application processing section is remarkably mitigable. Moreover, when the ease of a design is aimed at and it makes the scale of the application processing section into a suitable size, the application processing section of a suitable size can be constituted combining the function subdivided for every command ID.

[0050] Moreover, since the application processing section is specified as a one for one from CMIP command, processing is simplified. And the algorithm which discriminates the destination application processing section is easy, and the high-speed command delivery of it is attained.

[0051] Furthermore, although there is no information which shows rivalry in CMIP command, the unit of processing can be enough caught per parvus and a fine contention control becomes possible. Moreover, since grouping can be carried out in a suitable unit and useless reference processing can be omitted, high-speed processing is attained.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] When there is communication system which performs overhead operation which consisted of the management side system and the managed side system, and was based on OSI canonical with CMIP command between both the system, It is OSI interface device located between OSI environmental application section in the aforementioned managed side system of this communication system, and non-OSI environmental application section. CMIP command which is a command which comes out from the aforementioned OSI environmental application section is received. The content of the class information for a management and the instance information for a management which are a management information parameter in this CMIP command, and one or more management information parameters other than these is known. An information analysis means to create and output the internal command which asks for command identification information and contains the content and the aforementioned command identification information of a management information parameter in the concerned CMIP command according to them, Have a correspondence table with the identification information of all the application processing sections set as all command identification information and the object of a command reception, and the aforementioned correspondence table is referred to from the command identification information contained in the aforementioned internal command which received from the aforementioned information analysis means. The inside of two or more application processing sections from which the application processing section used as the destination of this internal command constitutes the aforementioned non-OSI environmental application section, a command delivery means to judge which it is and to pass the aforementioned internal command to the judged concerned application processing section -- since -- OSI interface device characterized by changing

[Claim 2] In OSI interface device according to claim 1, between the aforementioned information analysis means and a command delivery means, a contention-control means is connected and it changes the aforementioned contention-control means The 1st table matching and showing which group of commands and group of commands cannot be found in rivalry in two or more groups of commands by which group of commands and group of commands being in rivalry, The command under execution in the group-of-commands unit to which the command belongs If the internal command which has the 2nd table which displays that it is under execution, and was outputted from the aforementioned information analysis means is received From the command identification information in this internal command, know the group of commands to which the concerned internal command belongs, and the known group of commands and the group of commands in rivalry Even either of the groups of commands which know which and which it is with reference to the 1st aforementioned table, and are next in the rivalry but Whether it is displaying that the command belonging to the group is performing a means to know with reference to the 2nd aforementioned table, and to pass the aforementioned internal command received from the aforementioned information analysis means to the aforementioned command delivery means when not displaying -- since -- OSI interface device characterized by changing

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